Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

![C:\Users\MorwiB89\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\ON01N4BN\MC900335938[1].wmf]() **Domino Lab** ![C:\Users\MorwiB89\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\ON01N4BN\MC900335938[1].wmf]()

**Pre Lab Questions**

Draw the particles of each medium below. Use your notes to help.

Gas

Liquid

Solid

**Lab Information**

The purpose of this lab is to determine whether the speed of waves is affected as it travels through a solid, liquid, or gas.

The dominos will represent the particles that make up the solid, liquid, and gas.

**Procedure**

1. Line up the dominoes 2 centimeters apart until your last domino is at the 50 centimeter mark. Do this on your table.
2. Predict the amount of time you believe it will take for the dominoes to fall.
3. Record your prediction in the data table.
4. Measure the time it takes for all the dominoes to fall. Be sure to start the timer as you knock over the first domino and stop it just as the last domino hits the surface of the table.
5. Record the amount of time it took for all the dominoes to fall in the data chart for trial 1.
6. Repeat the procedures FOUR more times until all three trials are completed.
7. Now you will need to line up the dominoes 4 centimeters apart until your last domino is at the 100 centimeter mark (end of the meter stick).
8. Predict the amount of time you believe it will take for the dominoes to fall.
9. Record your prediction in the data table.
10. Measure the time it takes for all the dominoes to fall. Be sure to start the timer as you knock over the first domino and stop it just as the last domino hits the surface of the table.
11. Record the amount of time it took for all the dominoes to fall in the data chart.
12. Repeat the procedures FOUR more times until all three trials are completed.
13. Calculate the average for the 2 centimeters by adding all five trials and dividing by five. DO NOT ADD IN YOUR PREDICTION!
14. Calculate the average for the 4 centimeters by adding all five trials and dividing by five. DO NOT ADD IN YOUR PREDICTION!

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Domino setup** | **Prediction** | **Trial 1** | **Trial 2** | **Trial 3** | **Trial 4** | **Trial 5** | **Average speed dominoes fell** |
| 2 centimeters |  |  |  |  |  |  |  |
| 4 centimeters |  |  |  |  |  |  |  |

**Post Lab Questions.**

1. Which dominoes fell faster, the ones 2 centimeters apart or the ones 4 centimeters apart? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Think of the dominoes as the particles inside a medium (material). Which domino setup represented the solid; the 2 centimeter apart setup or the 4 centimeter apart setup? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Why do you think that domino setup represented the solid? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Again, think of the dominoes of particles inside a medium. Which domino setup represented the liquid; the 2 centimeter setup or the 4 centimeter setup? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Again, why do you think that domino setup represented a liquid? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. How far apart would you place the dominoes IF we wanted to represent a gas? WHY did you choose that setup? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. What would be a good prediction to how fast the dominoes would fall if we setup one for a gas? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Do waves travel faster through a liquid or a gas? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Do waves travel faster through a gas or a solid? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. Do waves travel faster through a solid or a liquid? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_